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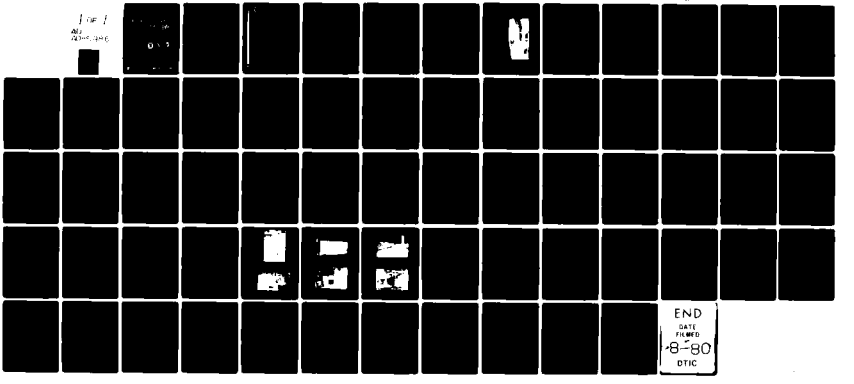

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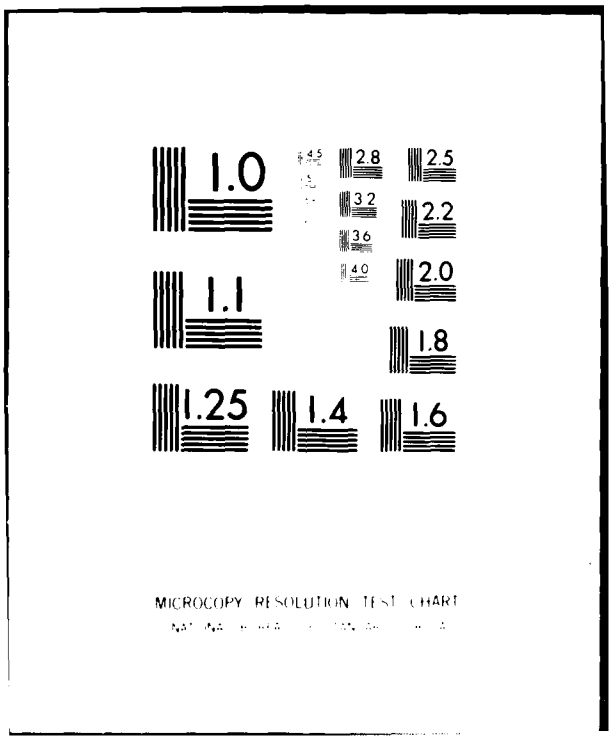
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ATLANTIC COAST BASIN
GIFFORDS MILL BRANCH
OF TUCKERTON CREEK
OCEAN COUNTY, NEW JERSEY

(1)

POHATCONG LAKE DAM NJ 00504

LEVEL II

PHASE 1 INSPECTION REPORT
NATIONAL DAM SAFETY PROGRAM

DEPARTMENT OF THE ARMY
Philadelphia District
Corps of Engineers
Philadelphia, Pennsylvania

ORIGINAL CONTAINS COLOR PLATES: ALL DDC REPRODUCTIONS WILL BE IN BLACK AND WHITE

MARCH 1980

(15) DACW61-79-C-0011

DEPARTMENT OF THE ARMY
PHILADELPHIA DISTRICT, CORPS OF ENGINEERS
CUSTOM HOUSE—2 D & CHESTNUT STREETS
PHILADELPHIA, PENNSYLVANIA 19106

IN REPLY REFER TO
NAPEN-N

(6) National Dam Safety Program. Pohatcong Lake Dam (NJ00504) Atlantic Coast Basin, Giffords Mill Branch of Tuckerton Creek, Ocean County, New Jersey. Phase ~~I JUN 1980~~ I Inspection Report.

Honorable Brendan T. Byrne
Governor of New Jersey
Trenton, New Jersey 08621

(11) Mar 80 (12) 65

Dear Governor Byrne:

Inclosed is the Phase I Inspection Report for Pohatcong Lake Dam in Ocean County, New Jersey which has been prepared under authorization of the Dam Inspection Act, Public Law 92-367. A brief assessment of the dam's condition is given in the front of the report.

Based on visual inspection, available records, calculations and past operational performance, Pohatcong Lake Dam, a high hazard potential structure, is judged to be in fair overall condition. The dam's spillways are considered inadequate because a flow equivalent to two percent of one half the Probable Maximum Flood would cause the dam to be overtopped. The decision to consider the spillways "inadequate" instead of "seriously inadequate" is based on the determination that dam failure from overtopping would not significantly increase the hazard to loss of life downstream from the dam from that which would exist just before overtopping failure. To ensure adequacy of the structure, the ~~following actions, as a minimum,~~ are recommended:

(9) Final rept.

a. The spillways' adequacy should be determined by a qualified professional consultant engaged by the owner using more sophisticated methods, procedures and studies within six months from the date of approval of this report. Within three months of the consultant's findings, remedial measures to ensure spillway adequacy should be initiated. In the interim, a detailed emergency operation plan and warning system should be promptly developed. Also, during periods of unusually heavy precipitation, around the clock surveillance should be provided.

b. Within one year from the date of approval of this report, the following actions should be initiated:

(1) The deteriorated areas of the exposed concrete surfaces of the spillways should be patched and the cracks filled. Also, the tops of all expansion joints should be cleaned out and caulked.

Approved for public release;
distribution unlimited

410850 Dm

(2) Regrade the slopes of the downstream embankment around the spillway wingwalls and stabilize with slope paving.

(3) Refill the scoured cavities along the upstream face with stone riprap or bagged soil-cement.

c. The owners should develop operating procedures and periodic maintenance plans to ensure the safety of the dam. Also the division of responsibility should be clarified by all involved parties, especially the operation of the stoplogs in the auxiliary spillway if the Utility Company installs a turbine in the east end of this conduit.

A copy of the report is being furnished to Mr. Dirk C. Hofman, New Jersey Department of Environmental Protection, the designated State Office contact for this program. Within five days of the date of this letter, a copy will also be sent to Congressman Hughes of the Second District. Under the provision of the Freedom of Information Act, the inspection report will be subject to release by this office, upon request, five days after the date of this letter.

Additional copies of this report may be obtained from the National Technical Information Services (NTIS), Springfield, Virginia 22161 at a reasonable cost. Please allow four to six weeks from the date of this letter for NTIS to have copies of the report available.

An important aspect of the Dam Inspection Program will be the implementation of the recommendations made as a result of the inspection. We accordingly request that we be advised of proposed actions taken by the State to implement our recommendations.

Sincerely,

1 Incl
As stated

JAMES G. TON
Colonel, Corps of Engineers
District Engineer

Copies furnished:
Mr. Dirk C. Hofman, P.E., Deputy Director
Division of Water Resources
N.J. Dept. of Environmental Protection
P.O. Box CN029
Trenton, NJ 08625

Mr. John O'Dowd, Acting Chief
Bureau of Flood Plain Regulation
Division of Water Resources
N.J. Dept. of Environmental Protection
P.O. Box CN029
Trenton, NJ 08625

POHATCONG LAKE DAM (NJ00504)

CORPS OF ENGINEERS ASSESSMENT OF GENERAL CONDITIONS

This dam was inspected on 30 November 1979 by Louis Berger and Associates, Inc., under contract to the State of New Jersey. The State, under agreement with the U.S. Army Engineer District, Philadelphia, had this inspection performed in accordance with the National Dam Inspection Act, Public Law 92-367.

Pohatcong Lake Dam, a high hazard potential structure, is judged to be in fair overall condition. The dam's spillways are considered inadequate because a flow equivalent to two percent of one half the Probable Maximum Flood - would cause the dam to be overtopped. The decision to consider the spillways "inadequate" instead of "seriously inadequate" is based on the determination that dam failure from overtopping would not significantly increase the hazard to loss of life downstream from the dam from that which would exist just before overtopping failure. To ensure adequacy of the structure, the following actions, as a minimum, are recommended:

a. The spillways' adequacy should be determined by a qualified professional consultant engaged by the owner using more sophisticated methods, procedures and studies within six months from the date of approval of this report. Within three months of the consultant's findings, remedial measures to ensure spillway adequacy should be initiated. In the interim, a detailed emergency operation plan and warning system should be promptly developed. Also, during periods of unusually heavy precipitation, around the clock surveillance should be provided.

b. Within one year from the date of approval of this report, the following actions should be initiated:

(1) The deteriorated areas of the exposed concrete surfaces of the spillways should be patched and the cracks filled. Also, the tops of all expansion joints should be cleaned out and caulked.

(2) Regrade the slopes of the downstream embankment around the spillway wingwalls and stabilize with slope paving.

(3) Refill the scoured cavities along the upstream face with stone riprap or bagged soil-cement.

c. The owners should develop operating procedures and periodic maintenance plans to ensure the safety of the dam. Also the division of responsibility should be clarified by all involved parties, especially the operation of the stoplogs in the auxiliary spillway if the Utility Company installs a turbine in the east end of this conduit.

APPROVED: _____

JAMES G. TON
Colonel, Corps of Engineers
District Engineer

DATE: _____

PHASE I REPORT
NATIONAL DAM INSPECTION PROGRAM

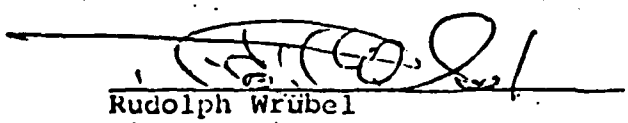
Name of Dam Pohatcong Lake Dam ID# NJ 00504

State Located New Jersey
County Located Ocean
Coordinates Lat. 3936.1 - Long. 7420.8
Stream Giffords Mill Branch of Tuckerton Creek
Date of Inspection 30 November 1979

ASSESSMENT OF GENERAL CONDITIONS

Pohatcong Lake Dam is assessed to be in a good overall condition. Overtopping would not exacerbate the danger to human life downstream but a collapse could endanger the Route 9 highway and the docks along the downstream channel. No detrimental findings were observed to render a hazardous assessment but additional hydraulic studies are recommended. Remedial actions to be undertaken in the future include 1) regrade and protect the downstream embankment slopes, 2) place riprap in the sloughed areas on the upstream face, and 3) patch the exposed deteriorated concrete surfaces on the spillway and recaulk all open joints. Also, the legal ownership of the dam and division of maintenance responsibility should be clarified.

Based upon Corps of Engineers criteria, this dam has an "inadequate" spillway capacity being able to accommodate only 2% of the ½ PMF design flood but is not assessed as UNSAFE, NON-EMERGENCY as failure from overtopping would not appreciably increase the downstream hazard from that condition prior to overtopping.



Rudolph Wrübel
Vice President
Louis Berger & Associates, Inc.

OVERVIEW OF POHATCONG LAKE DAM

January, 1980

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FIGURES

APPENDIX

PREFACE

This report is prepared under guidance contained in the Recommended Guidelines for Safety Inspection of Dams, for Phase I Investigations. Copies of these guidelines may be obtained from the Office of Chief of Engineers, Washington, D.C. 20314. The purpose of Phase I Investigation is to identify expeditiously those dams which may pose hazards to human life or property. The assessment of the general condition of the dam is based upon available data and visual inspections. Detailed investigation, and analyses involving topographic mapping, subsurface investigations, testing, and detailed computational evaluations are beyond the scope of a Phase I investigation; however, the investigation is intended to identify any need for such studies.

In reviewing this report, it should be realized that the reported condition of the dam is based on observations of field conditions at the time of inspection along with data available to the inspection team. It is important to note that the condition of a dam depends on numerous and constantly changing internal and external conditions, and is evolutionary in nature. It would be incorrect to assume that the present condition of the dam will continue to represent the condition of the dam at some point in the future. Only through continued care and inspection can there be any chance that unsafe conditions be detected.

Phase I inspections are not intended to provide detailed hydrologic and hydraulic analyses. In accordance with the established Guidelines, the Spillway Test flood is based on the estimated "Probable Maximum Flood" for the region (greatest reasonably possible storm runoff), or fractions thereof. The test flood provides a measure of relative spillway capacity and serves as an aid in determining the need for more detailed hydrologic and hydraulic studies, considering the size of the dam, its general condition and the downstream damage potential.

PHASE I INSPECTION REPORT
NATIONAL DAM INSPECTION PROGRAM
NAME OF DAM: POHATCONG LAKE DAM FED ID# NJ 00504

SECTION 1 - PROJECT INFORMATION

1.1 GENERAL

a. Authority

This report is authorized by the Dam Inspection Act, Public Law 92-367, and has been prepared in accordance with Contract FPM-36 between Louis Berger & Associates, Inc. and the State of New Jersey and its Department of Environmental Protection, Division of Water Resources. The State, in turn, is under agreement with the U.S. Army Engineer District, Philadelphia, to have this inspection performed.

b. Purpose of Inspection

The purpose of this inspection is to evaluate the structural and hydraulic condition of the Pohatcong Lake Dam and appurtenant structures, and to determine if the dam constitutes a hazard to human life or property.

1.2 DESCRIPTION OF PROJECT

a. Description of Dam and Appurtenances

Pohatcong Lake Dam is a well-established State Highway Department roadway embankment approximately 670 feet long with two drop inlet spillways. The main spillway is approximately 75 feet from the left abutment, while the auxiliary spillway is only a short distance from the left abutment (at the northeast end of the dam). Both spillways consist of two sets of removeable timber flashboards. The 45 foot wide embankment carries East Main Street (U.S. Route 9) across the entire southeast shore of Pohatcong Lake.

b. Location

Pohatcong Lake Dam is located immediately to the west of the intersection of Route 9 and County Road #539 in the Town of Tuckerton, Ocean County, New Jersey. It is built across the Giffords Mill Branch of Tuckerton Creek which flows south into the Little Egg Harbor at the south extremity of Long Beach Island.

c. Size Classification

The maximum height of the dam is 9 feet and the maximum storage is estimated to be 700 acre-feet. Therefore the dam is placed in the small size category as defined by the Recommended Guidelines for Safety Inspection of Dams (maximum storage less than 1,000 acre-feet and height less than 40 feet).

d. Hazard Classification

Based on Corps of Engineers criteria and the fact that in the event of a failure, excessive damage could occur to downstream properties together with the potential for loss of more than a few lives, the dam is classified as a high hazard. Additionally, three utility lines pass through the Route 9 embankment and the downstream channel is fronted by extensive marine facilities.

e. Ownership

There are no available ownership records in the Division of Water Resources. However, the road and the spillway culverts within the 80 foot R.O.W. embankment are under the jurisdiction of the NJDOT, with the Borough of Tuckerton owning the remainder. Further, the Tuckerton Utilities Company own the penstock building into which discharge from the auxiliary spillway enters. Thus, it appears there is joint ownership.

f. Purpose of Dam

At the present time the lake is used principally for recreational purposes. The Tuckerton Utilities Company is presently contemplating the restoration of the existing waterwheel and utilizing the lake for power generation.

g. Design and Construction History

Pohatcong Lake Dam is reputedly over 200 years old and was built in the early 1700's to provide power for a sawmill which was later converted over to a grist mill. The dam was used to generate power up until 1934. The Tuckerton Water Works Company is now considering the restoration of the water wheel at the left abutment in order to reduce the electric bills for their building located directly adjacent to the left abutment. In 1931 the State Highway

Department widened Route 9 approximately 20 feet and constructed the two concrete extensions on the spillway structures. More recently, the pavement has been again widened and new curb and guardrail installed.

h. Normal Operating Procedures

Personnel of the Township normally attend to the operating facilities and conduct seasonal maintenance (see Section 4).

1.3 PERTINENT DATA

a. Drainage Area

Pohatcong Lake Dam has a drainage area of 12.3 square miles.

b. Total spillway capacity at maximum pool elevation - 148 cfs.

c. Elevations (ft. above M.S.L.)

Top of dam - +11.0
Recreation pool - +7.0±
Streambed at centerline of dam - +2± (tidal basin)

d. Reservoir

Length of maximum pool (top of dam) - 8,700 feet
Length of recreation pool (spillway crest) - 3,000 feet

e. Storage (acre-feet)

Top of dam - 700
Recreation pool - 87

f. Reservoir Surface (acres)

Top of dam - 270
Recreation pool - 36.7

g. Dam

Type - earth roadway embankment
Length - 670± feet
Structural height - 9 feet
Top width - Varies (60' minimum)
Side Slopes - 1.5H:1V
Zoning - unknown

h. Diversion and Regulating Tunnel - none

i. Spillways

Type - 1) Principal: concrete culvert with two sets of 3.5' wide timber flashboards (length = 7 feet).

2) Auxiliary: concrete culvert with two sets of 3' wide timber flashboards (length = 6 feet).

Crest elevation - 1) Principal: +7.0
2) Auxiliary: +7.25

U/S channel - main lake reservoir
D/S channel - natural tidal river basin

j. Regulating Outlets - timber flashboards set in both spillway gates (manually operated).

SECTION 2 - ENGINEERING DATA

2.1 DESIGN

No design information was located for review although the Department of Transportation furnished prints of the as-built microfilm records for the 1931 roadwork. These plans depicted the overall geometry of the dam site and the details of the approximately 20 foot widening which was constructed on the upstream face of the existing embankment. The work was designed and the construction supervised by the Highway Department. No information was located regarding the earlier sluiceway construction.

2.2 CONSTRUCTION

No information was available as to who accomplished the road construction. From the lack of serious differential settlement, it is assumed that the 50 year old fill is well compacted. The underlying foundation soils are recent alluvium overlying stratified swamp deposits. The silty clays and sands are variable in composition with inter-mixed gravels and sands with good internal drainage characteristics. The alluvial material is generally less than 10 feet thick. Depth to the Pre-Cambrian bedrock is greater than 100 feet. The visible surficial soils in the immediate vicinity of the lake consist of recent alluvium comprised mostly of sand and silt with appreciable amounts of gravel and clay in some areas. The alluvium is mixed with and overlies swampy soils. Beyond the zone of recent alluvium, stratified deposits of the Cape May, Pennsauken and Bridgeton formations occur at the ground surface. The stratified Pennsauken silty sands and sandy silts predominate at the southeast side of the lake. Gravel and sand with small quantities of silt and clay are present in the other zones around the lake. The permeability of the Pennsaukan sands is generally poor whereas the Cape May and Bridgeton sands and gravels have good to excellent permeability. Stratified marine deposits of the Cohansey formation underlie the area and may be encountered at depths less than ten feet below the ground surface, especially on the west side of the lake.

2.3 OPERATION

There are no records of construction modifications and the present structure is essentially as it was reconstructed in 1931. As a dam, there are no records

of inspections and the spillway operates essentially uncontrolled except for adjustment during heavy storms (see Section 4).

2.4 EVALUATION

a. Availability

Sufficient engineering data regarding the makeup or zoning of the embankment is not available to fully assess the design of this element but it appears that locally available material was used.

b. Adequacy

The 1931 contract plans prepared by the State Highway Department are considered adequate to assess this dam under the purview of the Phase I inspection.

c. Validity

Based on field observations and discussions with local engineering personnel of the utility, the existing data obtained appears valid and is not challenged but accepted without recourse to gathering additional data.

SECTION 3 - VISUAL INSPECTION

3.1 FINDINGS

a. General

Visual inspection of the dam was conducted on 30 November 1979. The water level at the time of inspection was a few inches above the timber flashboards and flowing freely. A reinspection was conducted on 11 January 1980 when the water level was slightly lower.

b. Dam

In general, the dam was found to be in a satisfactorily stable condition and numerous areas in the downstream areas have been refilled and brought up to nearly the crest grade. The reservoir water level appears to be fairly constant during most periods (except for very heavy rainstorms) and the outflow is fairly uniform. The embankment is well compacted and there is no evidence of seepage as the true downstream backslopes are completely obliterated. There is ample evidence of various repaving and patching, but the attitude of the guardrail, telephone poles and curbs indicate that there has been no serious settlement problems. There are several commercial stores on the downstream embankment area. The surface runoff from the roadway pavement appears to be a minor maintenance problem but appears to be under control at the present time. The shoulder subgrade has failed in several areas, but this is a minor maintenance problem. The entire upstream face of the embankment appears to be protected with stone riprap but the limits could not be discerned due to the overgrowth of weeds. The zone between the two spillways is faced with a solidly-built timber bulkhead.

The height of most of the embankment is approximately six feet except at the spillway and due to the exceedingly wide pavement structure, presents no structural danger regarding percolation or embankment failure. The upstream slopes have been further protected along much of the face with soil-cement concrete sacks or bags.

There is considerable surface erosion at the main spillway culvert downstream wingwalls. It appears the 1931 widening was extended on the upstream face and the backslopes have not been regraded in several decades.

c. Appurtenant Structures

The 7' x 6' principal concrete spillway culvert is in good condition and has only minor cracks and spalls along the weathered edges of the inlet and tops of outlet retaining walls. Although no detailed plans were available, it is believed this structure is built on spread footings and due to its size and length is structurally stable. The alignment of the underside of the top slab and wingwalls is true and the wingwalls show little signs of tilting or differential settlement. It was noted that the gate housing and entrance flashboard racks for the auxiliary powerhouse spillway were apparently constructed at the same time in 1931.

Most of the widening (20'±) took place on the upstream face and the original conduits for the two spillways were arch or pipe culverts that predated the 1931 work. The steel flashboard racks and pulling devices are rusted but in good operable condition and in spite of their age, appear to be well maintained. There are remnants of some type of timber construction adjacent to the main spillway intake but the purpose of this apparently abandoned construction could not be determined.

d. Reservoir Area

Pohatcong Lake has a stable, well-defined shoreline which extends over 3,000 feet northwest. Above the gently sloping but wooded shores there is a bathing beach on the right shoreline.

e. Downstream Channel

The streambed below the dam discharges directly into a tidal boating channel with numerous docks and marine developments on each bank which is protected along much of the shoreline with timber bulkheads and marina facilities. The discharge channel immediately below the main spillway is approximately 20 feet wide but expands out to over 100 feet about 60 feet below the outlet. The discharge from

the utility company powerhouse joins the main channel at this point. The downstream channel flows directly southward about two miles before discharging into Little Egg Harbor at the Tuckerton Cove.

SECTION 4 - OPERATIONAL PROCEDURES

4.1 PROCEDURES

Operational procedures were not observed by the inspection team. The roadway embankment and appurtenant surface drainage structures are part of the District Four Department of Transportation normal operation and maintenance responsibilities. No manuals or instructions for the regulation of flow were available. It could not be determined who officially exercises control over the spillway flashboards although the Borough pulls the flashboards during heavy storms.

4.2 MAINTENANCE OF DAM

Maintenance of the embankment and culvert structures are carried out by the NJDOT. There is no evidence of any maintenance or repair of the intakes having been undertaken recently.

4.3 MAINTENANCE OF OPERATING FACILITIES

The only operational facilities are the timber flashboards and they apparently have not been replaced in several years. There are no other operational facilities nor established instructions available for the regulation of flow.

4.4 DESCRIPTION OF WARNING SYSTEM IN EFFECT

At the present time, there is no formal warning system in effect. However, the State and Borough personnel monitor the dam during periods of heavy flow as the dam is located on a heavily travelled State highway.

4.5 EVALUATION OF OPERATIONAL ADEQUACY

The present operational procedures and safeguards during periods of heavy flow are deemed to be adequate in view of the period of time required for the dam to be overtopped and the relatively large retention capacity of the upstream zone around the lake.

SECTION 5 - HYDRAULIC/HYDROLOGIC

5.1 EVALUATION OF FEATURES

a. Design Data

In accordance with the criteria in the Recommended Guidelines for Safety Inspection of Dams, it has been determined that Pohatcong Lake Dam is small in size but placed in the high hazard category. Accordingly, the spillway design flood (SDF) was determined by the inspection team to be one-half the probable maximum flood (PMF). The inflow hydrograph was calculated using precipitation data from Hydrometeorological Report #33.

In accordance with Corps of Engineers directives, the inflow hydrograph and flood routing were performed utilizing the HEC-1 computer program. Peak inflow for the ½ PMF was 8,289 cfs. When routed through the reservoir the peak reduced to 7,489 cfs. The spillway capacity before overtopping occurs is 148 cfs and thus can accommodate a scant 2% of the design flood.

b. Experience Data

Discussions with local residents revealed that the dam has been overtopped in the past, causing Route 9 to flood and become closed to traffic. There was no recorded evidence of the hydraulic performance of this structure.

c. Visual Observations

Due to the very flat terrain, little serious damage is foreseen due to a dam overtopping. It was noted that severe high tides also come up to within a few feet of the roadway crest.

d. Overtopping Potential

It is unknown to what depths the previous overtoppings have crested the Route 9 pavement but the appended calculations indicate a possible depth of 2.5 feet which appears plausible in view of the surrounding topography and the dam's spillway capacity. During a heavy storm, the complete removal of the flashboards would provide little relief from the ultimate flood levels. A much higher depth of overtopping cannot reasonably be foreseen because at that

elevation, the flood would inundate large portions of the surrounding terrain and a further rise would not be expected. Therefore, the conditions are such that failure from overtopping would not significantly increase the hazard to loss of life downstream from that which would exist just before overtopping failure occurs.

e. Drawdown

Dewatering can be accomplished by removal of either set of flashboards. Assuming no tailwater or tidal effects in the downstream channel (El. 2±), it would take approximately three quarters of a day to drawdown the reservoir by utilizing both sluiceways.

SECTION 6 - STRUCTURAL STABILITY

6.1 EVALUATION OF STRUCTURAL STABILITY

a. Visual Observations

Based on the visual inspection and review of the available design plans of the Highway Department, Pohatcong Lake Dam is deemed to be in a sound structural condition as long as the embankment is not breached either side of the main spillway. With the low height to width ratio, the trapozoidal embankment is in a very stable condition with adequate factors of safety against sliding, overturning and earthquake loadings. A wash-out or undercutting of the spillway structures, however, could lead to its collapse, especially along the downstream wingwalls of the main spillway. The marine "beach" sand at the founding elevation of the culvert footings is very compact and dense and the spillways are believed to be stable as long as they are not undermined and the surrounding embankment remains in place.

The crest is well protected by the roadway's asphalt pavement and overtopping would do little damage to the dam. In summary, the structural conditions are evaluated to be non-critical insofar as the dam's safety is concerned. The lack of spillway capacity is another matter (see Section 7).

b. Design and Construction Data

Original design computations for stress analyses and overturning stability were unavailable but all elements of the dam have been conservatively apportioned, due in part to the highway widening and low hydraulic head. There is no construction data available.

c. Operating Records

No records are available but the spillways function satisfactorily as uncontrolled weirs. The crest roadway surface run-off is a minor maintenance problem but is presently under control by State maintenance forces. There are no records at the Division of Water Resources that the dam has been inspected in recent times.

d. Post Construction Changes

There is no evidence of any post-1931 construction changes except new highway metal guardrail has been installed in more recent times.

e. Seismic Stability

This dam is located in Seismic Zone 1 and experience indicates that low dams of this type will have adequate stability under earthquake dynamic loading conditions if stable under static loading conditions. As previously stated, this dam is stable under normal loading conditions.

SECTION 7 - ASSESSMENTS/RECOMMENDATIONS/ REMEDIAL MEASURES

7.1 DAM ASSESSMENT

a. Safety

Subject to the inherent limitations of the Phase I visual inspection procedures stipulated by the Corps of Engineers, the Pohatcong Lake Dam is adjudged to be in an adequately sound overall structural condition, although the spillway is incapable of transmitting the SDF without overtopping. No detrimental findings were revealed except those recommended to be corrected by the remedial items stipulated below.

The spillway capacity is "inadequate" and does not meet the requirements of the Recommended Guidelines for Safety Inspection of Dams, being able to accommodate only 2 percent of the ½ PMF design flood as calculated by Corps of Engineers criteria. However, the conditions are such that failure from overtopping would not significantly increase the hazard to loss of life downstream from that which would exist just before overtopping failure occurs. Due to the very flat terrain, overtopping flows would spread out into surrounding areas and diminish the height of any flood to that normally attained by high coastal tide and overland flow conditions such as would be expected if the dam did not exist. The level terrain would diminish any further rise in flood levels and the overall condition would not increase the danger to human life.

b. Adequacy of Information

The information obtained for the Phase I inspection is deemed to be adequate and it is believed that little else is available. Performance data is non-existent. Therefore, in view of the hazard classification and downstream conditions, the information is considered adequate for the assessment.

c. Urgency

A collapse of either spillway could endanger the transportation in the immediate area. However, in view of the overall conditions, it is recommended

that the remedial measures set forth below be taken under advisement in the future as all present conditions appear to be very stable.

d. Necessity for Further Study

Further structural studies regarding the dam itself are believed to be unnecessary but additional hydraulic/hydrologic studies are recommended as dictated by Corps of Engineers criteria, especially in view of the small spillway capacity.

7.2 RECOMMENDATIONS/REMEDIAL MEASURES

a. Recommendations

The deteriorated areas of the exposed concrete surfaces of the spillways should be patched and the cracks filled. Also the tops of all expansion joints should be cleaned out and caulked.

Other remedial measures include:

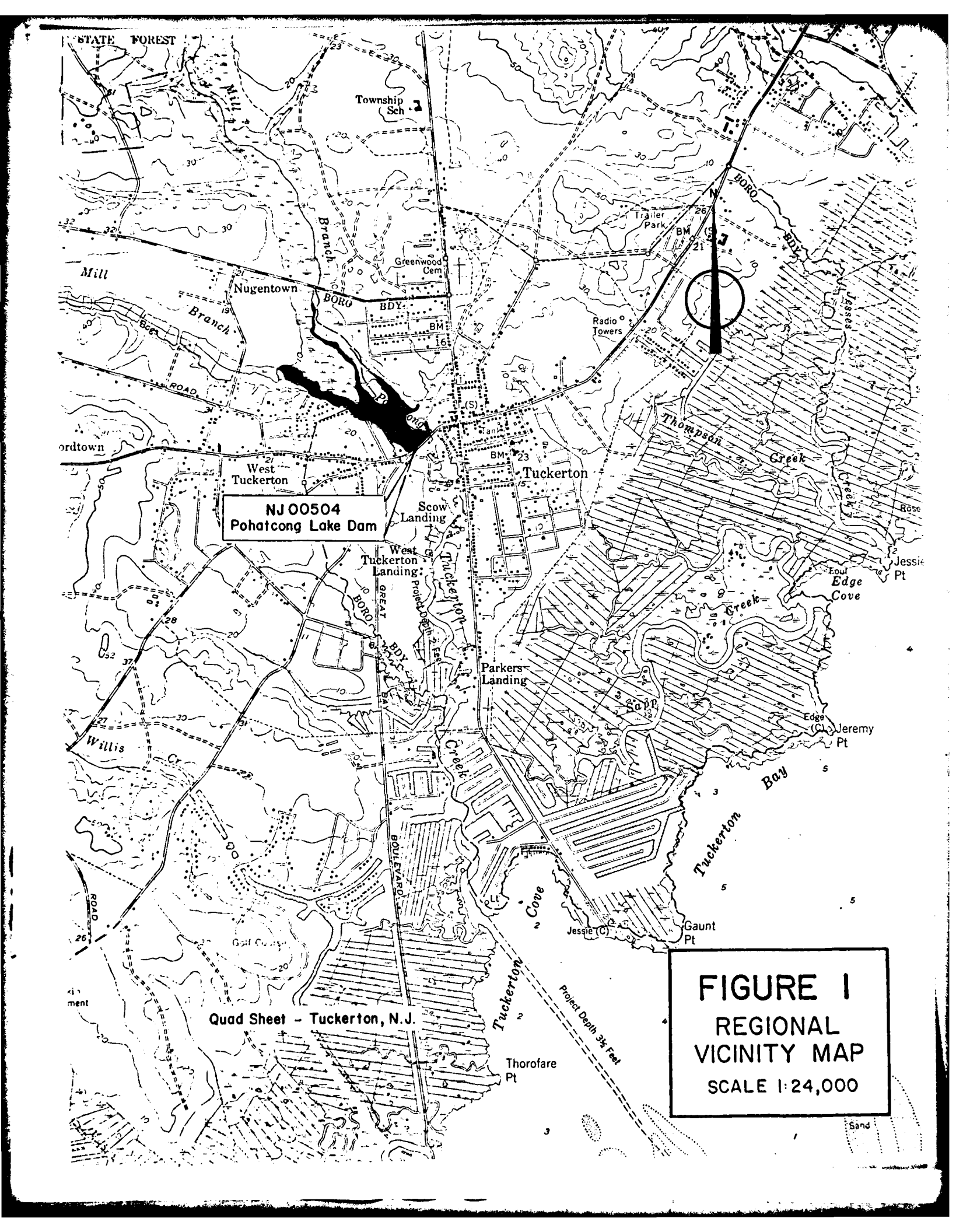
- Regrade the slopes of the downstream embankment around the spillway wingwalls and stabilize with slope paving.

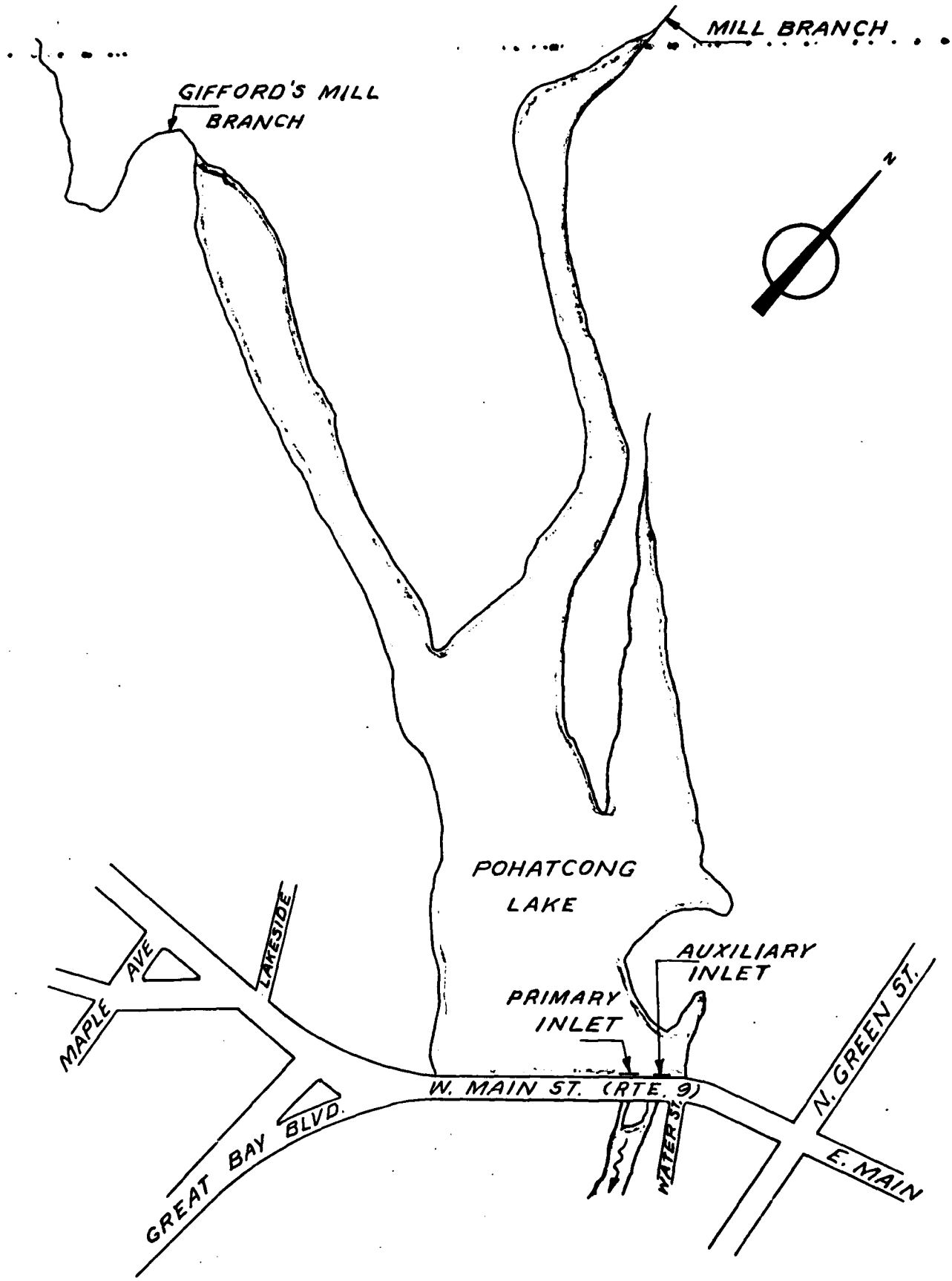
- Refill the scoured cavities along the upstream face with stone riprap or bagged soil-cement.

b. O&M Maintenance and Procedures

No additional procedures other than those presently in effect are warranted. However, it is recommended that the County and Borough develop a checklist of periodic maintenance inspections so records of conditions and repairs can be maintained. It is also suggested that the division of responsibility be clarified by all involved parties, especially the operation of the stoplogs in the auxiliary spillway if the Utility Company installs a turbine in the east end of this conduit.

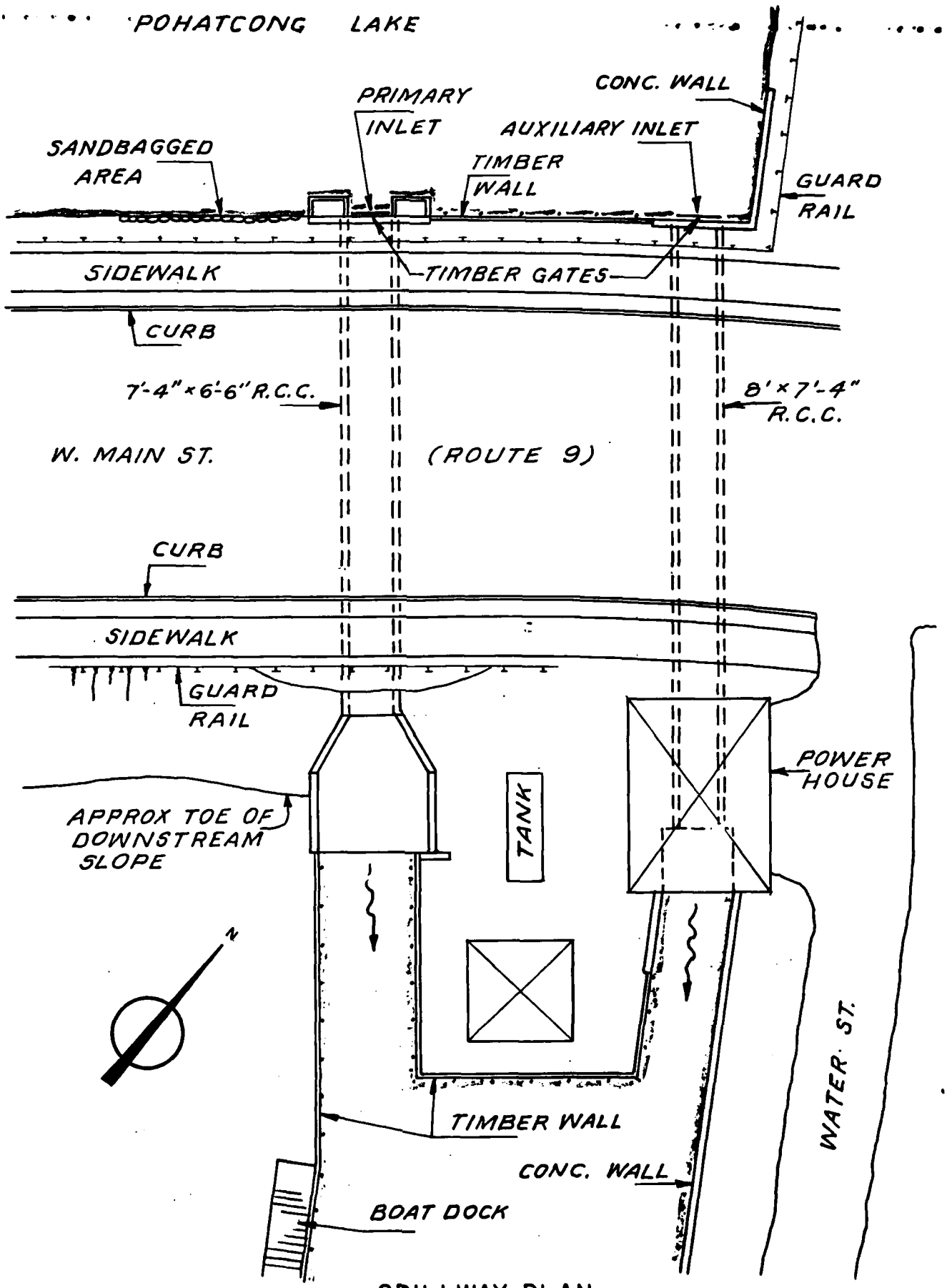
As previously stated, although the State Department of Transportation apparently owns the dam, the Borough continues to maintain the spillway entrances but Tuckerton Utilities own the penstock at the auxiliary spillway outfall.


NJ 00504
Pohatcong Lake Dam
Quad Sheet - Tuckerton, N.J.
FIGURE 1
REGIONAL
VICINITY MAP
SCALE 1:24,000
STATE FOREST
Township Sch
Nugentown
West Tuckerton
Tuckerton
Scow Landing
West Tuckerton Landing
Parkers Landing
Trailer Park
Greenwood Cem
Radio Towers
Thompson Creek
Edge Cove
Jeremy Pt
Gaunt Pt
Thorofare Pt
Tuckerton Cove
Tuckerton Bay
Project Depth 2 Feet
Project Depth 3½ Feet
BORO
BDY
ROAD
BOULEVARD



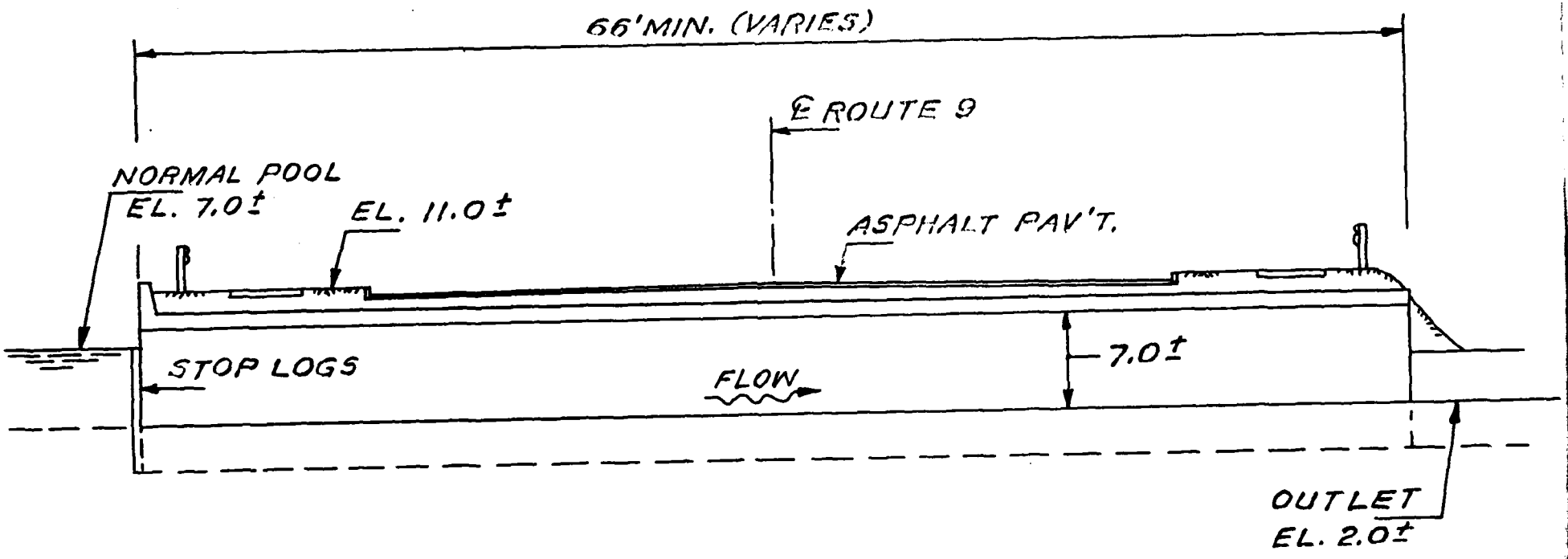
LOCATION PLAN

FIGURE 2



SPILLWAY PLAN
NOT TO SCALE

FIGURE 3



SECTION THRU PRINCIPAL SPILLWAY

NOT TO SCALE

FIGURE 4

Check List
Visual Inspection
Phase 1

Name Dam Pohatcong Lake County Ocean State New Jersey Coordinators NJDEP

Date(s) Inspection 11/30/79 Weather Clear,windy Temperature 35°F

Pool Elevation at Time of Inspection 7.0 M.S.L. Tailwater at Time of Inspection +3.5 M.S.L.

Inspection Personnel:

D. Lang K. Jolls

L. Baines

M. Carter

D. Lang Recorder

EARTH DAMS

VISUAL EXAMINATION OF	OBSERVATIONS	REMARKS OR RECOMMENDATIONS
SEE PAGE ON LEAKAGE		
STRUCTURE TO ABUTMENT/EMBANKMENT JUNCTIONS	Water level 37" down from Geodetic B.M. G55. 38½ foot long concrete bulkhead in Good condition.	
DRAINS	None evident	
WATER PASSAGES	Concrete culverts through roadway embankment.	
FOUNDATION	Unknown	

EARTH DAMS

VISUAL EXAMINATION OF	OBSERVATIONS	REMARKS OR RECOMMENDATIONS
SURFACE CRACKS CONCRETE SURFACES	Some near east abutment.	
STRUCTURAL CRACKING	Heavy cracking at east end near gas station.	
VERTICAL AND HORIZONTAL ALIGNMENT	Good at both spillway intakes.	
MONOLITH JOINTS	Satisfactory	
CONSTRUCTION JOINTS	Good at outlet structure.	

EMBANKMENT

VISUAL EXAMINATION OF	OBSERVATIONS	REMARKS OR RECOMMENDATIONS
SURFACE CRACKS	None, paved State Highway.	
UNUSUAL MOVEMENT OR CRACKING AT OR BEYOND THE TOE	Timber bulkhead along much of upstream and downstream toes. Old boat basin and docks behind Stewarts Root Beer.	
SLOUGHING OR EROSION OF EMBANKMENT AND ABUTMENT SLOPES	Embankment covered with grass on upstream slope. Guardrail on upstream side. 2.5' wide dirt area from guardrail to lake edge.	
VERTICAL AND HORIZONTAL ALINEMENT OF THE CREST	Good. Route 9 - 60' ± wide.	
RIPRAP FAILURES	Riprap failure 135' west of main spillway (Length of failure approx. 8'). Concrete sand bagged entire upstream face except for last 100 ft.	

EMBANKMENT

VISUAL EXAMINATION OF	OBSERVATIONS	REMARKS OR RECOMMENDATIONS
JUNCTION OF EMBANKMENT AND ABUTMENT, SPILLWAY AND DAM	Good	
ANY NOTICEABLE SEEPAGE	None	
STAFF GAGE AND RECORDER	Staff gage located just downstream of main spillway on dock. Level reads 1.5.	
DRAINS	None	

OUTLET WORKS

VISUAL EXAMINATION OF	OBSERVATIONS	REMARKS OR RECOMMENDATIONS
CRACKING AND SPALLING OF CONCRETE SURFACES IN OUTLET CONDUIT	Minor on outlet structure.	
INTAKE STRUCTURE		
OUTLET STRUCTURE	Concrete culvert.	
OUTLET CHANNEL		
EMERGENCY GATE	None	

Page 6 is not available

GATED SPILLWAY

VISUAL EXAMINATION OF	OBSERVATIONS	REMARKS OR RECOMMENDATIONS
CONCRETE SILL		
APPROACH CHANNEL	Pohatcong Lake	
DISCHARGE CHANNEL	Dam discharges directly into a tidal boating channel.	
BRIDGE AND PIERS	None	
GATES AND OPERATION EQUIPMENT	3' wide timber flashboards set in spillway gate. Manually operated.	

INSTRUMENTATION

VISUAL EXAMINATION	OBSERVATIONS	REMARKS OR RECOMMENDATIONS
MONUMENTATION/SURVEYS	G55 Geodetic Bench mark on concrete wall over main spillway.	El. 11.453 (adjusted)
OBSERVATION WELLS	None	
WEIRS	None	
PIEZOMETERS	None	
OTHER	None	

RESERVOIR

VISUAL EXAMINATION OF	OBSERVATIONS	REMARKS OR RECOMMENDATIONS
SLOPES	Very flat; beach area on left side. Right side not developed - heavily wooded banks, low swampy area.	
SEDIMENTATION	Some near upstream face.	

DOWNSTREAM CHANNEL

VISUAL EXAMINATION OF	OBSERVATIONS	REMARKS OR RECOMMENDATIONS
CONDITION (OBSTRUCTIONS, DEBRIS, ETC.)	Old boat docks and piers to right of main spillway.	
SLOPES	Timber bulkheads. Channelized, tidal.	
APPROXIMATE NO. OF HOMES AND POPULATION	Numerous houses and boats.	

CHECK LIST
ENGINEERING DATA
DESIGN, CONSTRUCTION, OPERATION

ITEM	REMARKS
PLAN OF DAM	Available - NJDEP - Div. of Water Resources - Bureau of Flood Plain Management. P.O. Box CN-029 Trenton, N.J. 08625
REGIONAL VICINITY MAP	Available - U.S.G.S. Quad - Tuckerton, N.J.
CONSTRUCTION HISTORY	Not available
TYPICAL SECTIONS OF DAM	Available (NJDEP)
HYDROLOGIC/HYDRAULIC DATA	None available
OUTLETS - PLAN	Some available (NJDEP)
- DETAILS	Some available (NJDEP)
-CONSTRAINTS	Unknown
-DISCHARGE RATINGS	None available
RAINFALL/RESERVOIR RECORDS	None available

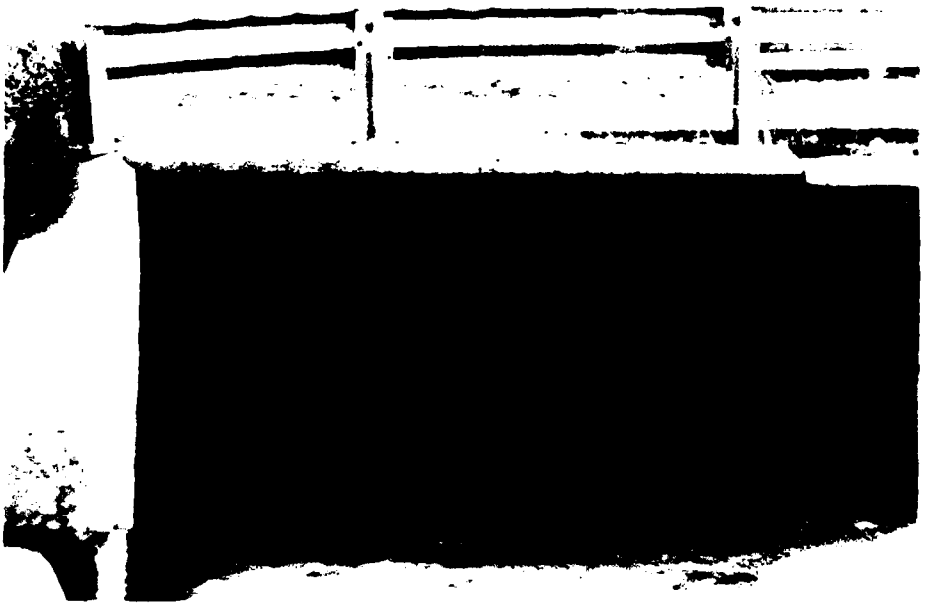
ITEM	REMARKS
SPILLWAY PLAN	None available
SECTIONS	" "
DETAILS	" "
OPERATING EQUIPMENT PLANS & DETAILS	None available

ITEM	REMARKS
DESIGN REPORTS	None available
GEOLOGY REPORTS	None available
DESIGN COMPUTATIONS	None available
HYDROLOGY & HYDRAULICS	" "
DAM STABILITY	" "
SEEPAGE STUDIES	
MATERIALS INVESTIGATIONS	None available
BORING RECORDS	" "
LABORATORY	" "
FIELD	
POST-CONSTRUCTION SURVEYS OF DAM	None available
BORROW SOURCES	Unknown

ITEM	REMARKS
MONITORING SYSTEMS	None
MODIFICATIONS	1931 roadway reconstruction - NJDOT - P.O. Box 101, Trenton, N.J.
HIGH POOL RECORDS	None available
POST CONSTRUCTION ENGINEERING STUDIES AND REPORTS	None available
PRIOR ACCIDENTS OR FAILURE OF DAM	None available
DESCRIPTION	" "
REPORTS	" "
MAINTENANCE OPERATION RECORDS	None available

January, 1980
View of Main Spillway

November, 1979
View of Main Spillway Outlet



January, 1980

View of Auxilway Spillway

November, 1979

View of Auxiliary Spillway Outlet (Penstock Through Utility Building

View of Cresf Looking Southwest January, 1980

View Downstream November, 1979

CHECK LIST
HYDROLOGIC AND HYDRAULIC DATA
ENGINEERING DATA

DRAINAGE AREA CHARACTERISTICS: Drainage Area = 12.3 square miles

ELEVATION TOP NORMAL POOL (STORAGE CAPACITY): +7.0± (87 acre-ft)

ELEVATION TOP FLOOD CONTROL POOL (STORAGE CAPACITY): _____

ELEVATION MAXIMUM DESIGN POOL: + 11.0 ± (700 acre-ft)

ELEVATION TOP DAM: +11.0 ±

CREST: _____

a. Elevation +11.0
b. Type County roadway embankment
c. Width Varies - 66' minimum
d. Length 670' ±
e. Location Spillover near left abutment
f. Number and Type of Gates _____

OUTLET WORKS: _____

a. Type Concrete culvert with timber flashboards
b. Location near left abutment
c. Entrance inverts +7.0' ±
d. Exit inverts +2.0' ±
e. Emergency draindown facilities removal of flashboards

HYDROMETEOROLOGICAL GAGES: _____

a. Type Staff gage
b. Location downstream pier below main spillway
c. Records reading of inspection time +1.5

MAXIMUM NON-DAMAGING DISCHARGE: 148 cfs

BY RFB DATE 1-16-80 **LOUIS BERGER & ASSOCIATES INC.** SHEET NO. A1 OF

CHKD. BY DATE POHATCONG LAKE DAM PROJECT C-246

SUBJECT

TIME OF CONCENTRATION

LENGTH ALONG WATERCOURSE TO DRAINAGE DIVIDE = 42,600 FT
= 8.07 MI

$\Delta H = 140 - 7 = 133$ FT

$$\text{SLOPE} = \frac{133 \text{ FT} \times 100}{42600} = 0.3\%$$ · ASSUME VELOCITY = 2 FT/SEC

$$t_c = \frac{42,600}{2 \times 3600} = 5.92 \text{ HRS}$$

BY CALIFORNIA CULVERTS METHOD

$$t_c = \left[\frac{11.9\, L^3}{H}\right]^{0.385} = \left[\frac{11.9\,(8.07)^3}{133}\right]^{.0385} = 4.40 \text{ HR}$$

BY KIRPICH'S FORMULA

$$t_c = 0.00013 \times \frac{L^{0.77}}{S^{0.385}} = \frac{(1.3 \times 10^{-4})(42,600)^{0.77}}{(.0031)^{0.385}} = 4.41 \text{ HRS}$$

USE AVERAGE $t_c = 4.91$ HRS

$$T_p = \frac{D}{2} + 0.6 \times t_c$$

$$T_p = \frac{1}{2} + 0.6 \times 4.91 = 3.45 \text{ HOURS}$$

BY RFP DATE 1-16-80 **LOUIS BERGER & ASSOCIATES INC.** SHEET NO. A2 OF
CHKD. BY DATE Pequannock Lake Dam PROJECT C-246
SUBJECT

$$q_p = \frac{256A(1)}{T_p} = \frac{256(12.3)1}{3.45} = 913 \text{ cfs}$$

UNIT GRAPH

TIME HOURS	T/Tp	DIMENSIONLESS ORDINATE (D.O.)	Q (cfs) Qp x D.O.
1	0.29	0.23	210
2	0.55	0.57	520
3	0.87	0.95	867
4	1.16	0.97	886
5	1.45	0.86	785
6	1.74	0.72	657
7	2.03	0.56	520
8	2.32	0.50	456
9	2.61	0.43	392
10	2.90	0.37	338
11	3.19	0.32	292
12	3.45	0.28	256
13	3.77	0.23	210
14	4.06	0.21	192
15	4.35	0.19	173
16	4.64	0.18	164
17	4.93	0.16	146
18	5.22	0.15	137
19	5.51	0.13	119
20	5.80	0.12	110
21	6.09	0.11	100
22	6.38	0.09	82
23	6.67	0.08	73
24	6.96	0.06	55
25	7.25	0.05	46
26	7.54	0.04	37
27	7.83	0.035	32
28	8.11	0.03	28
			$\Sigma = 7894$

CHECK $\frac{7894 \times 12 \times 3600}{1 \times 12.3 \times (5280)^2} = 0.995 \cong 1$

BY RFL DATE

CHKD. BY DATE

SUBJECT

LOUIS BERGER & ASSOCIATES INC.

PEQUABUCK LAKE DAM

SHEET NO. A3 OF

PROJECT C-246

PRECIPITATION

PROBABLE MAXIMUM PRECIPITATION FOR 200 SQ.MI.
24 HRS = 24.3 INCHES

MAXIMUM 6 HOUR PERCENTAGE = 110%

MAXIMUM 12 HOUR PERCENTAGE = 120%

MAXIMUM 24 HOUR PERCENTAGE = 129%

MAXIMUM 48 HOUR PERCENTAGE = 140%

BY RFB DATE 1-16-80 **LOUIS BERGER & ASSOCIATES INC.** SHEET NO. A-4 OF

CHKD. BY DATE POWATSONG LAKE DAM PROJECT C-246

SUBJECT SPILLWAY CAPACITY

@ ELEV 7.5 (H = 0.5)

MAIN SPILLWAY $Q = CLH^{3/2} = 3.0(7)(.5)^{3/2} = 7.4$ cfs

AUX. SPILLWAY $Q = CLH^{3/2} = 3.0(6)(.25)^{3/2} = 2.3$ cfs

@ ELEV 8.25 (H = 1.25)

M.S. $Q = CLH^{3/2} = 3.0(7)(1.25)^{3/2} = 29.2$

A.S. $Q = CLH^{3/2} = 3.0(6)(.75)^{3/2} = 11.7$

@ ELEV 9.0 (H = 2.0)

M.S. $Q = \frac{2}{3}\sqrt{2g}(C)(L)(H_1^{3/2} - H_2^{3/2})$

$Q = 5.38(0.65)(7)(2^{3/2} - .75^{3/2}) = 53$

A.S. $Q = 5.38(C)(L)(H_1^{3/2} - H_2^{3/2})$

$Q = 5.38(0.66)(6)(1.75^{3/2} - 0.75^{3/2}) = 35$

@ ELEV 11.0 (H = 4.0)

M.S. $Q = 5.38\,CL(H_1^{3/2} - H_2^{3/2})$

$Q = 5.36(.69)(7)(4^{3/2} - 2.75^{3/2}) = 89$

A.S. $Q = 5.38\,CL(H_1^{3/2} - H_2^{3/2})$

$Q = 5.38(0.68)(6)(3.75^{3/2} - 2.75^{3/2}) = 59$

@ ELEV. 12.0 (H = 5.0)

M.S. $Q = 5.38\,CL(H_1^{3/2} - H_2^{3/2})$

$Q = 5.38(0.69)(5^{3/2} - 3.75^{3/2})(7) = 102$

$Q = 5.38\,CL(H_1^{3/2} - H_2^{3/2})$

$Q = 5.23(0.68)(6)(4.75^{3/2} - 3.75^{3/2}) = 68$

BY RFP DATE 1-16-80 **LOUIS BERGER & ASSOCIATES INC.** SHEET NO. A5 OF

CHKD. BY DATE POQUATSONG LAKE DAM PROJECT S-246

SUBJECT SPILLWAY CAPACITY

@ ELEV 13.0 (H = 6.0)

M.S. $Q = 5.38(0.70)(7)(6^{3/2} - 4.75^{3/2}) =$ 115

A.S. $Q = 5.38(0.70)(6)(5.75^{3/2} - 4.75^{3/2}) =$ 78

@ ELEV 14.0 (H = 7.0)

M.S. $Q = 5.38(0.70)(7)(7^{3/2} - 5.75^{3/2}) =$ 125

A.S. $Q = 5.38(0.70)(6)(6.75^{3/2} - 5.75^{3/2}) =$ 84

@ ELEV 15.0 (H = 8.0)

M.S $Q = 5.38(0.70)(7)(8^{3/2} - 6.75^{3/2}) =$ 134

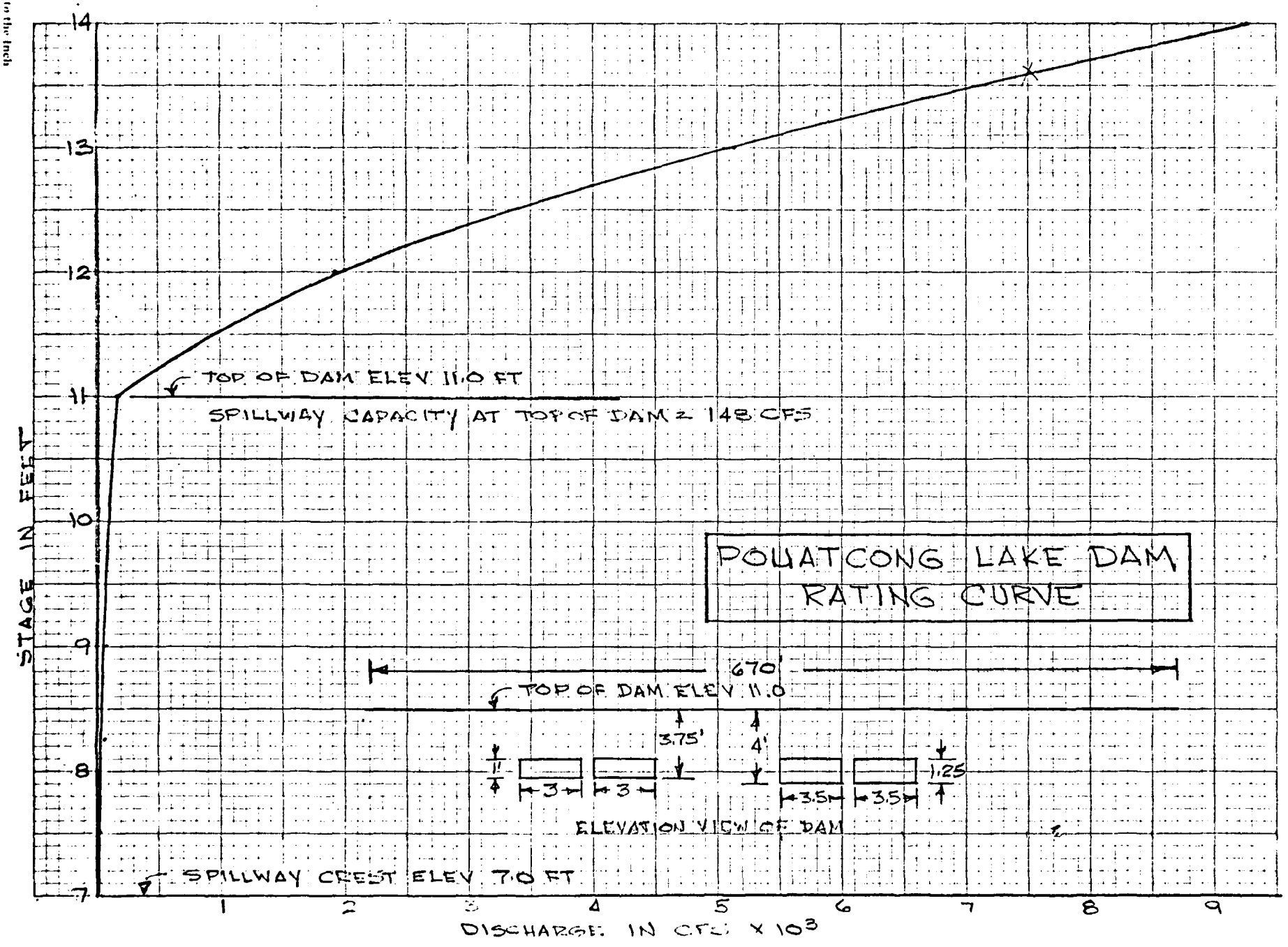
A.S. $Q = 5.38(0.71)(6)(7.75^{3/2} - 6.75^{3/2}) =$ 93

@ ELEV 16 (H = 9.0)

M.S. $Q = 5.38(0.70)(7)(9^{3/2} - 7.75^{3/2}) =$ 143

A.S. $Q = 5.38(0.71)(6)(8.75^{3/2} - 7.75^{3/2}) =$ 99

ELEV	H	Q MAIN SPILL	Q AUX SPILL	OVER EMBANKMENT H	C	L	Q	Σ Q
7	0	0	0	0	2.6	670	0	0
7.5	.5	7	2	0			0	9
8.25	1.25	29	12	0			0	41
9	2	53	35	0			0	88
11	4	89	59	0			0	148
12	5	102	68	1			1742	1912
13	6	115	78	2			4927	5120
14	7	125	84	3			9052	9262
15	8	134	93	4			13936	14163
16	9	143	99	5			19476	19718


POUATCONG LAKE DAM
RATING CURVE
TOP OF DAM ELEV 11.0 FT
SPILLWAY CAPACITY AT TOP OF DAM = 148 CFS
SPILLWAY CREST ELEV 7.0 FT
STAGE IN FEET
DISCHARGE IN CFS X 10³
14
13
12
11
10
9
8
7
1
2
3
4
5
6
7
8
9
670'
TOP OF DAM ELEV 11.0
3.75'
4'
1'
3
3
3.5
3.5
1.25
ELEVATION VIEW OF DAM

C-246

A-6

BY RFB DATE 1-17-80 **LOUIS BERGER & ASSOCIATES INC.** SHEET NO. A-7 OF

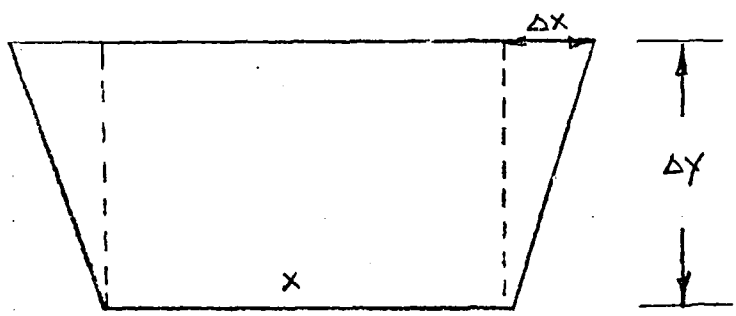
CHKD. BY DATE POUATCONG LAKE DAM PROJECT

SUBJECT STORAGE CAPACITY

AREA OF LAKE @ ELEV. 7.0 = 36.7 ACRES

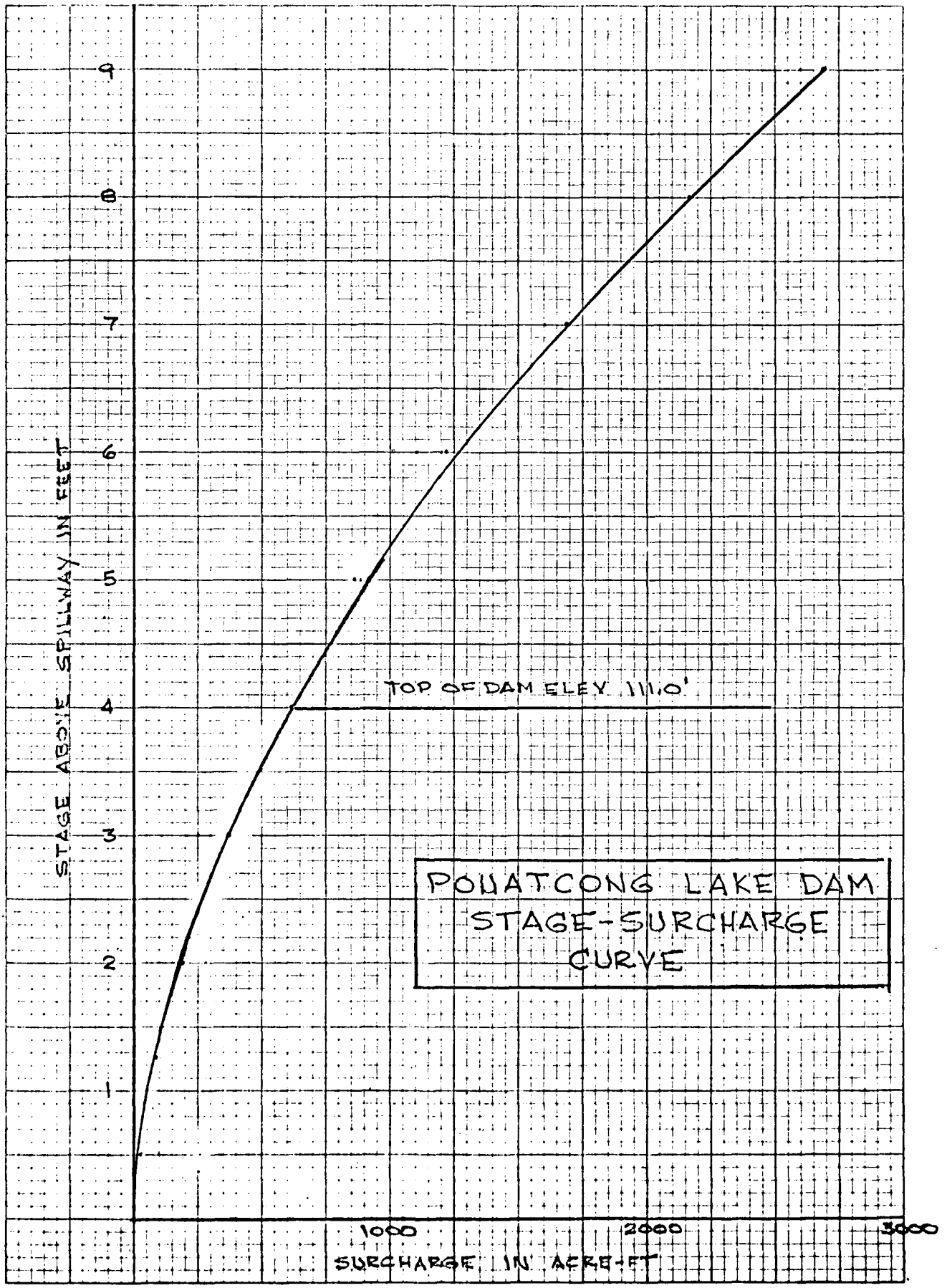
AREA @ 10 FT CONTOUR = 212 ACRES

ASSUME POOL AREA ABOVE 10 FT PROJECTS AT SAME RATE



$$\Delta V = \Delta y(x + \Delta x)$$

HEIGHT ABOVE SPILLWAY CREST	A ACRES	Δ VOL	SURCHARGE STORAGE ACRE-FT
0	36.7	0	0
.5	65.9	25.6	26
1.25	109.7	65.8	91
2	153.6	96.7	190
3	212	182.8	373
4	270.4	241.2	614
5	328.8	299.6	914
6	387.3	358.0	1318
7	445.7	416.5	1688
8	504.2	474.9	2163
9	562.6	533.4	2696



10 Squares to the Inch

BY RFB DATE 1-17-90 **LOUIS BERGER & ASSOCIATES INC.** SHEET NO. A9 OF.

CHKD. BY DATE POQUATCOMB LAKE DAM PROJECT C-246

SUBJECT APPROXIMATE DRAWDOWN TIME

ASSUME ALL STOPLOGS REMOVED FROM BOTH MAIN AND AUXILLARY SPILLWAYS, STRUCTURES ACT AS BOX CULVERTS. ASSUME NO TAIL WATER AND INLET CONTROL GOVERNS. ASSUME INFLOW = 12 CFS

FROM FIG B-12, DESIGN OF SMALL DAMS

HEAD AT NORMAL POOL = 7.0 - 2.25 = 4.75 FT

H	HW/D	Q/W	Q
			D = 6.0 FT
4.75	0.79	26	338 - 12
4.0	0.67	21	273 - 12
3.0	0.50	13	169 - 12
2.0	0.33	7	91 - 12
0	0	0	0

W = 2(3.5) + 2(3)

W = 13 FT

H	Q	ΔQ	Vol	ΔVol	Time Hours
4.75	326		87		
		294		13.7	0.6
4	261		73.3		
		209		16.4	1.1
3	157		54.9		
		115		18.3	1.9
2	73		36.6		
		37		36.6	12.
0	0		0		

Σ = 15.6 HRS

SAY 3/4 DAY

```
.A   POHATCONG LAKE DAM

A   POHATCONG LAKE DAM
A   BY RFB
A   JANUARY, 1980
B    100      1       0
1      3
K      0      1                                                    1
1   INFLOW TO RESERVOIR
M      1     -1    12.3       0    12.3              0.5
P            24.3     110     120     129     140
1                                                    0.5     0.1
U     28
1    210     220     867     886     785     657     530     456     393     338
1    262     256     210     192     173     144     146     137     119     110
1    100      82      73      55      46      37      32      20
K      0       0       1                                       1
K      1      11
1   ROUTING THROUGH RESERVOIR
Y                                    1
1      1
2      0      26      91     190     614     914    1218    1688    2163    2696
3      0       9      41      88     248    1912    5120    9262   14163   19718
K     99
A
A
A
A
A
```

****
HEC-1 VERSION DATED JAN 1973
UPDATED AUG 74
CHANGE NO. 01
****

POHATCONG LAKE DAM
BY RFB
JANUARY, 1980

JOB SPECIFICATION

NQ	NHR	NMIN	IDAY	IHR	IMIN	METRC	IPLT	IPRT	NSTAN
100	1	0	0	0	0	0	0	0	0

JOPER	NWT
3	0

********** ********** ********** ********** **********

SUB-AREA RUNOFF COMPUTATION

INFLOW TO RESERVOIR

ISTAQ	ICOMP	IECON	ITAPE	JPLT	JPRT	INAME
1	0	0	0	0	0	1

HYDROGRAPH DATA

IHYDG	IUHG	TAREA	SNAP	TRSDA	TRSPC	RATIO	ISNOW	ISAME	LOCAL
1	-1	12.30	0.00	12.30	0.00	0.500	0	0	0

PRECIP DATA

SPFE	PMS	R6	R12	R24	R48	R72	R96
0.00	24.30	110.00	120.00	129.00	140.00	0.00	0.00

TRSPC COMPUTED BY THE PROGRAM IS 0.807

LOSS DATA

STRKR	DLTKR	RTIOL	ERAIN	STRKS	RTIOK	STRTL	CNSTL	ALSMX	RTIMP
0.00	0.00	1.00	0.00	0.00	1.00	0.50	0.10	0.00	0.00

GIVEN UNIT GRAPH, NUHGG= 28

210.	520.	867.	886.	785.	657.	530.	456.	393.	338.
292.	256.	210.	192.	173.	164.	146.	137.	119.	110.
100.	82.	73.	55.	46.	37.	32.	28.		

UNIT GRAPH TOTALS 7894. CFS OR 1.00 INCHES OVER THE AREA

RECESSION DATA

STRTG= 0.00 GRCSN= 0.00 RTIOR= 1.00

END-OF-PERIOD FLOW

TIME	RAIN	EXCS	COMP Q
1	0.01	0.00	0.
2	0.01	0.00	0.
3	0.01	0.00	0.
4	0.01	0.00	0.
5	0.01	0.00	0.

6	0.01	0.00	0.
7	0.03	0.00	0.
8	0.03	0.00	0.
9	0.03	0.00	0.
10	0.03	0.00	0.
11	0.03	0.00	0.
12	0.03	0.00	0.
13	0.18	0.00	0.
14	0.22	0.07	15.
15	0.28	0.18	75.
16	0.70	0.60	280.
17	0.26	0.16	561.
18	0.20	0.10	836.
19	0.02	0.00	906.
20	0.02	0.00	853.
21	0.02	0.00	734.
22	0.02	0.00	610.
23	0.02	0.00	518.
24	0.02	0.00	442.
25	0.12	0.02	385.
26	0.12	0.02	342.
27	0.12	0.02	313.
28	0.12	0.02	286.
29	0.12	0.02	274.
30	0.12	0.02	264.
31	0.33	0.23	303.
32	0.33	0.23	403.
33	0.33	0.23	579.
34	0.33	0.23	754.
35	0.33	0.23	911.
36	0.33	0.23	1040.
37	2.16	2.06	1520.
38	2.59	2.49	3691.
39	3.24	3.14	4667.
40	8.20	8.10	8105.
41	3.02	2.92	12032.
42	2.37	2.27	15669.
43	0.18	0.08	16577.
44	0.18	0.08	15694.
45	0.18	0.08	13704.
46	0.18	0.08	11594.
47	0.18	0.08	9929.
48	0.18	0.08	8575.
49	0.00	0.00	7451.
50	0.00	0.00	6486.
51	0.00	0.00	5653.
52	0.00	0.00	4886.
53	0.00	0.00	4350.
54	0.00	0.00	3897.
55	0.00	0.00	3570.
56	0.00	0.00	3226.
57	0.00	0.00	2948.
58	0.00	0.00	2618.
59	0.00	0.00	2350.
60	0.00	0.00	2064.

61	0.00	0.00	1760.
62	0.00	0.00	1500.
63	0.00	0.00	1213.
64	0.00	0.00	1006.
65	0.00	0.00	777.
66	0.00	0.00	601.
67	0.00	0.00	440.
68	0.00	0.00	185.
69	0.00	0.00	89.
70	0.00	0.00	21.
71	0.00	0.00	15.
72	0.00	0.00	11.
73	0.00	0.00	7.
74	0.00	0.00	5.
75	0.00	0.00	2.
76	0.00	0.00	0.
77	0.00	0.00	0.
78	0.00	0.00	0.
79	0.00	0.00	0.
80	0.00	0.00	0.
81	0.00	0.00	0.
82	0.00	0.00	0.
83	0.00	0.00	0.
84	0.00	0.00	0.
85	0.00	0.00	0.
86	0.00	0.00	0.
87	0.00	0.00	0.
88	0.00	0.00	0.
89	0.00	0.00	0.
90	0.00	0.00	0.
91	0.00	0.00	0.
92	0.00	0.00	0.
93	0.00	0.00	0.
94	0.00	0.00	0.
95	0.00	0.00	0.
96	0.00	0.00	0.
97	0.00	0.00	0.
98	0.00	0.00	0.
99	0.00	0.00	0.
100	0.00	0.00	0.
SUM	27.56	24.07	189535.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	16577.	14212.	7102.	2632.	189533.
INCHES		10.75	21.49	23.89	23.89
AC-FT		7051.	14095.	15672.	15672.

RUNOFF MULTIPLIED BY 0.50

0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	8.	37.	140.	281.	418.	453.	426.
367.	305.	259.	221.	192.	171.	157.	143.	137.	132.
152.	202.	289.	377.	455.	520.	761.	1325.	2334.	4052.
6016.	7834.	8289.	7847.	6852.	5797.	4965.	4287.	3726.	3243.
2826.	2443.	2175.	1949.	1785.	1613.	1474.	1309.	1175.	1032.

880.	750.	607.	503.	388.	300.	220.	92.	44.	10.
8.	5.	4.	2.	1.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	8289.	7106.	3551.	1316.	94767.
INCHES		5.37	10.74	11.95	11.95
AC-FT		3525.	7047.	7836.	7836.

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HYDROGRAPH ROUTING

ROUTING THROUGH RESERVOIR

ISTAQ	ICOMP	IECON	ITAPE	JPLT	JPRT	INAME
11	1	0	0	0	0	1

ROUTING DATA

QLOSS	CLOSS	AVG	IRES	ISAME
0.0	0.000	0.00	1	0

NSTPS	NSTOL	LAG	AMSKK	X	TSK	STORA
1	0	0	0.000	0.000	0.000	0.

STORAGE=	0.	26.	91.	190.	614.	914.	1218.	1688.	2163.	2696.
OUTFLOW=	0.	9.	41.	88.	148.	1912.	5120.	9262.	14163.	19718.

TIME	EOP STOR	AVG IN	EOP OUT
1	0.	0.	0.
2	0.	0.	0.
3	0.	0.	0.
4	0.	0.	0.
5	0.	0.	0.
6	0.	0.	0.
7	0.	0.	0.
8	0.	0.	0.
9	0.	0.	0.
10	0.	0.	0.
11	0.	0.	0.
12	0.	0.	0.
13	0.	0.	0.
14	0.	4.	0.
15	2.	22.	1.
16	9.	89.	3.
17	26.	210.	9.
18	54.	349.	23.
19	87.	435.	39.
20	120.	440.	55.
21	147.	397.	68.
22	169.	336.	78.
23	186.	282.	86.
24	198.	240.	89.
25	208.	207.	91.

26	215.	182.	92.
27	221.	164.	92.
28	226.	150.	93.
29	230.	140.	94.
30	233.	135.	94.
31	237.	142.	95.
32	244.	177.	96.
33	256.	246.	97.
34	276.	333.	100.
35	302.	416.	104.
36	333.	488.	108.
37	377.	641.	114.
38	453.	1043.	125.
39	593.	1830.	145.
40	800.	3193.	1241.
41	1034.	5034.	3173.
42	1251.	6925.	5412.
43	1412.	8062.	6826.
44	1487.	8068.	7489.
45	1478.	7350.	7415.
46	1412.	6324.	6833.
47	1324.	5381.	6057.
48	1238.	4626.	5293.
49	1163.	4007.	4536.
50	1102.	3484.	3897.
51	1052.	3035.	3373.
52	1010.	2635.	2925.
53	975.	2309.	2551.
54	946.	2062.	2254.
55	924.	1867.	2019.
56	904.	1699.	1856.
57	884.	1543.	1734.
58	861.	1391.	1600.
59	837.	1242.	1460.
60	813.	1104.	1321.
61	789.	956.	1178.
62	765.	815.	1036.
63	741.	678.	896.
64	719.	555.	763.
65	697.	446.	639.
66	678.	344.	524.
67	660.	260.	421.
68	643.	156.	317.
69	626.	68.	220.
70	613.	27.	148.
71	602.	9.	146.
72	590.	7.	145.
73	579.	5.	143.
74	567.	3.	141.
75	556.	2.	140.
76	544.	1.	138.
77	533.	0.	137.
78	522.	0.	135.
79	511.	0.	133.
80	500.	0.	132.

81	489.	0.	130.
82	478.	0.	129.
83	468.	0.	127.
84	457.	0.	126.
85	447.	0.	124.
86	437.	0.	123.
87	427.	0.	121.
88	417.	0.	120.
89	407.	0.	119.
90	397.	0.	117.
91	387.	0.	116.
92	378.	0.	115.
93	368.	0.	113.
94	359.	0.	112.
95	350.	0.	111.
96	341.	0.	109.
97	332.	0.	108.
98	323.	0.	107.
99	314.	0.	106.
100	306.	0.	104.
SUM			91122.

	PEAK	6-HOUR	24-HOUR	72-HOUR	TOTAL VOLUME
CFS	7489.	6672.	3432.	1254.	91122.
INCHES		5.05	10.38	11.38	11.49
AC-FT		3310.	6811.	7467.	7535.

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RUNOFF SUMMARY, AVERAGE FLOW

		PEAK	6-HOUR	24-HOUR	72-HOUR	AREA
HYDROGRAPH AT	1	8289.	7106.	3551.	1316.	12.30
ROUTED TO	11	7489.	6672.	3432.	1254.	12.30

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

REPORT DOCUMENTATION PAGE

READ INSTRUCTIONS BEFORE COMPLETING FORM

1. REPORT NUMBER: NJ00504	2. GOVT ACCESSION NO.: AD-A085986
3. RECIPIENT'S CATALOG NUMBER:	
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7. AUTHOR(s):	8. CONTRACT OR GRANT NUMBER(s): DACW61-79-C-0011
9. PERFORMING ORGANIZATION NAME AND ADDRESS: Louis Berger & Associates / ATTN: F. Keith Jolls 100 Halstead St. East Orange, NJ 07019	10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS:
11. CONTROLLING OFFICE NAME AND ADDRESS: NJ Department of Environmental Protection Division of Water Resources P.O. Box CN029 Trenton, NJ 08625	12. REPORT DATE: March 1980
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19. KEY WORDS (Continue on reverse side if necessary and identify by block number)

Dams
Spillways
Visual inspection
Structural analysis
National Dam Safety Program
Pohatcong Lake Dam, NJ

20. ABSTRACT (Continue on reverse side if necessary and identify by block number)

This report cites results of a technical investigation as to the dam's adequacy. The inspection and evaluation of the dam is as prescribed by the National Dam Inspection Act, Public Law 92-367. The technical investigation includes visual inspection, review of available design and construction records, and preliminary structural and hydraulic and hydrologic calculations, as applicable. An assessment of the dam's general condition is included in the report.

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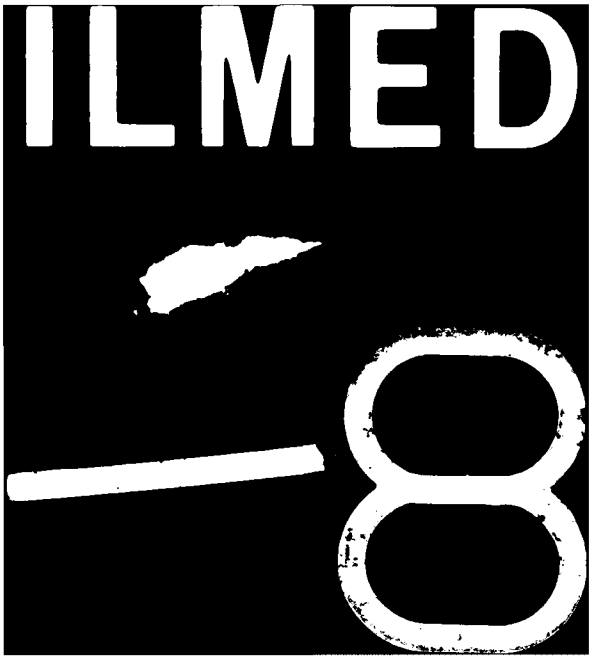
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